

WHAT IS CLAIMED IS:

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1. A catheter system for ablating biological tissue at a target tissue site, comprising:

an elongated body member having proximal and distal ends;

an ablation device disposed at the distal portion of the body member and including at least one ablation element adapted to emit ablative energy therefrom; and

a flexible member operably disposed between the distal portion of the steering means and the distal portion of the elongated body member; and

a means for steering the catheter proximate to the target tissue site,

wherein upon deflection of the steering means the flexible member dynamically deflects the distal portion of the body member and the ablation device is placed proximate and substantially parallel to the target tissue site whereby effective tissue ablation can be achieved.

2. The catheter system of claim 1, wherein the flexible member structurally overlaps with at least a portion of the ablation device.

3. The catheter system of claim 2, wherein the flexible member further comprises a means for limiting the deflection along one geometric plane.

4. The catheter system of claim 2, wherein the flexible member is a coil spring.

5. The catheter system of claim 4, wherein the limiting means is a pair of longitudinal members mounted along the exterior of the flexible member, each longitudinal member mounted 180° apart with respect to each other.

6. The catheter system of claim 2, wherein the flexible member is a beam member having a proximal end operably attached to the steering means.

7. The catheter system of claim 6, wherein the beam has a cross-sectional geometry adapted to limit deflection of the distal portion of the body member to substantially one geometric plane.

8. The catheter system of claim 7, wherein the cross-sectional geometry of the beam is rectangular.

9. The catheter system of claim 7, wherein the beam has a width greater than a length.

10. The catheter system of claim 2, wherein the flexible member is integral to the steering means.

11. The catheter system of claim 2, wherein the at least one ablation element is selected from the group consisting of: electrical heating elements, RF electrode, thermally conductive tubule, microwave antenna, chemical aspirator, optical fiber or fiber bundle, and ultrasound transducer.

12. The catheter system of claim 2, wherein the emitted ablative energy is one or more energy sources selected from the group consisting of: AC or DC electrical energy, radio frequency, cryogenic, microwave, chemical, laser, and ultrasound.

13. A method of ablating biological tissue, comprising the steps of:

providing an ablation catheter system comprising:

an elongated tubular member having a flexible portion adjacent its distal portion;

an ablation device comprising at least one ablation element adapted to emit ablative energy therefrom;

and a means for steering the catheter system toward a target tissue site, the steering means disposed proximal to the ablative device;

advancing and steering the catheter to a point proximate the target tissue site;

positioning the ablative device proximate and substantially parallel to the target tissue site;

and applying ablative energy to the at least one ablation element.

14. The method of claim 13, wherein the step of positioning the ablative device further comprises the step of deflecting the distal portion of the ablation catheter system until the ablative device is proximate and substantially parallel to a portion of the target tissue site, the step of ablating resulting in the formation of one lesion along a desired lesion path.

15. The method of claim 14, further comprising the step of translating the ablative device along the desired lesion path, whereby the distal portion of the ablation catheter is further deflected through operation of the flexible member, the step of ablating results in the formation of an additional lesion along the desired lesion path.

16. The method of claim 14, wherein the additional lesion overlaps an existing lesion whereby a long continuous lesion is formed.

17. The method of claim 16, wherein the step of translating the ablative device is repeated until a long continuous lesion is formed upon the entire desired lesion path.

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